PATENT ABSTRACTS OF JAPAN

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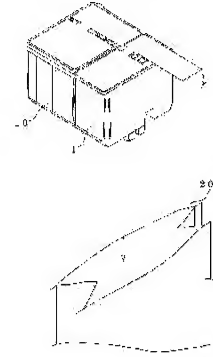
(54) INK CARTRIDGE FOR INK JET RECORDING APPARATUS



(57)Abstract:

PROBLEM TO BE SOLVED: To decrease packaging costs, preserve an environment, save resources and prevent a working error while maintaining a state of an ink cartridge in which the cartridge is reduced in pressure for a long time.

SOLUTION: A plurality of, e.g. a black ink cartridge 1 and a color ink cartridge 10 to be initially loaded in an ink jet recording apparatus are sealed in a state having the pressure reduced into the same bag formed of a gas insulating member, and packed.

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CLAIMS

[Claim(s)]

[Claim 1] The ink cartridge for ink jet recording apparatus which closed two or more ink cartridges together in the state of reduced pressure in the ink cartridge for ink jet recording apparatus to single packaging which consists of an air-barrier-property member.

[Claim 2] The appearance of said ink cartridge is the ink cartridge for ink jet recording apparatus according to claim 1 in which the identifiable field is formed a part at least in said a part of packaging.

[Claim 3] The ink cartridge for ink jet recording apparatus which closed two or more sorts of ink cartridges together in the state of reduced pressure to single packaging which consists of an air-barrier-property member in the ink cartridge for ink jet recording apparatus which prints using two or more sorts of ink cartridges.

[Claim 4] The appearance of said ink cartridge is the ink cartridge for ink jet recording apparatus according to claim 3 in which the identifiable field is formed a part at least in said a part of packaging.

[Claim 5] The ink cartridge for ink jet recording apparatus which closed two or more ink cartridges enclosed by the ink jet recording apparatus of an intact condition together in the state of reduced pressure in the ink cartridge for ink jet recording apparatus to single packaging which consists of an air-barrier-property member.

[Claim 6] The appearance of said ink cartridge is the ink cartridge for ink jet recording apparatus according to claim 5 in which the identifiable field is formed a part at least in said a part of packaging.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention is related in the cartridge for ink jet recording apparatus, and the packing gestalt of two or more [more] ink cartridges [detail].

[0002]

[Description of the Prior Art] The ink jet recording device is packed up with the condition of not filling up a recording head with ink by the case, with an ink cartridge, an operation manual, and other accessories on the relation treating a liquid called ink. And actuation filled up with ink is performed, without leaving the foreign matter which equips

a recording head with an ink cartridge, serves as air bubbles etc. to initial loading actuation, i.e., a recording head, and serves as record actuation with a failure in the phase over a user's hand. In order that what raised whenever [degassing] as compared with that with which use is usually presented in order to prevent certainly that air bubbles remain at the time of restoration of ink is used and the ink cartridge enclosed by such an object for initial loading, i.e., a recording apparatus, may maintain whenever [degassing] for a long period of time, as shown in drawing 6 (b) and (b), it is packed up with a reduced-pressure condition by the bags A and B which consisted of air-barrier-property members, and classification is displayed on each. Moreover, although exchanging an ink cartridge for a new thing and filling up a recording head with ink is performed when ink is consumed by printing and it becomes an ink end, it is packed up the same with having mentioned above such an ink cartridge for exchange.

[0003]

[Problem(s) to be Solved by the Invention] Usually, since it is packed up with the reduced pressure condition according to the individual with the bag which consisted of air-barrier-property members, when loading with two or more kinds of ink cartridges like a color ink jet recording apparatus the first stage, respectively, an ink cartridge needs to take out two or more ink cartridges from a bag to coincidence, and requires time and effort for it. In order to pack up specially what is used not only for it but for coincidence according to an individual, package cost goes up, and two or more bags serve as dust, and consumption of packing material is caused, and it is not desirable from a viewpoint of environmental preservation or saving resources. The place which this invention is made in view of such a problem, and is made into the purpose is offering the ink cartridge of an ink jet recording apparatus which can moreover plan not only the reduction in package cost but environmental preservation, and saving resources, maintaining a reduced pressure condition for a long period of time.

[0004]

[Means for Solving the Problem] In order to solve such a problem, in this invention, two or more ink cartridges were closed together in the state of reduced pressure in the ink cartridge for ink jet recording apparatus to single packaging which consists of an air-barrier-property member.

[0005]

[The mode of implementation of invention] Then, based on the example illustrating the detail of this invention, it explains below. Drawing 1 and drawing 2 show one example of the ink cartridge of this invention, the cartridge 1 for black ink can hold the ink of optimum dose, as shown in drawing 1 , and ink is held and it is constituted [it closes opening with a lid 4 on the case body 3 which equipped the upper part with the ink feed hopper 2 (this drawing (**)) which opens opening for free passage with a recording head in the lower part again, and].

[0006] The rill 8 which connects the ink inlet 5, the atmospheric-air free passage opening 6, and the atmospheric-air free passage opening 6 and the atmospheric-air clear aperture 7 is formed in the top face of a lid 4, as shown in drawing 1 (Ha), 9a tears off a part and the closure is carried out with the possible film 9.

[0007] Moreover, as shown in drawing 2 , the color ink cartridge 10 is divided into two or more rooms 11 by the wall so that the optimum dose hold of the ink of each color can be carried out, the ink of each color is held in each part store 11, and closes opening with

a lid 14 on the case body 13 which equipped the upper part with the ink feed hopper 12 which opens opening for free passage in each part store 11 again at the lower part, and is constituted.
[0008] The rill 18 which connects the ink inlet 15, the atmospheric-air free passage opening 16, and the atmospheric-air free passage opening 16 and the atmospheric-air clear aperture 17 is formed in the top face of a lid 14, as shown in drawing 1 (Ha), 19a tears off a part and the closure is carried out with the possible film 19.
[0009] And if it is in the ink cartridge for initial loading especially, the ink by which degassing was fully carried out is filled up with the degree of vacuum usually higher than the case of elegance.
[0010] The object for these black ink and the cartridges 1 and 10 for color ink are decompressed from opening 20a, as shown in drawing 4 (b), as shown in drawing 3 , it holds in the bag 20 as was constituted by air blocking film by making two pieces into a pair, the closure of them is carried out by heat joining etc., they are packed up, and as shown in drawing 4 (b), remainder 20b is folded up.
[0011] Thus, since dead space arises among two or more ink cartridges by closing two ink cartridges 1 and 10 into the same bag 20, big reduced pressure space can be secured as compared with the case where each is independently closed into a bag, and the ink of two ink cartridges 1 and 10 can be maintained in the degassing condition with the negative pressure of this reduced pressure space for a long period of time.
[0012] In addition, the sense is not asked, if it does not spoil the function or shelf life of an ink cartridge in packing up two or more ink cartridges 1 and 10 into a bag 20.
[0013] Moreover, since what is necessary is just to hold one bag 20 in a case also in case it encloses with a recording device, the packaging to a case can be simplified to man day reduction of a reduced pressure activity or closure activities, and a pan.
[0014] On the other hand, if one bag is opened, since the cartridge the object for black ink and for color ink will become usable, the user who purchased the recording apparatus can save the time and effort of opening. And a recording head can be filled up with ink the first stage, without making a recording head generate air bubbles by bigger reduced pressure space than the case of the independent package secured to the bag, though the long time has passed since factory shipments, since whenever [degassing / of the ink of each ink cartridge] is fully high. And since only the wreckage of one packaging remains also after extraction of two or more ink cartridges, streamlining of dust can be attained.
[0015] Drawing 5 (b) and (b) show other examples of this invention, respectively, and set them in the example of drawing 5 (b). Field 20c which contacts patterns, such as an alphabetic character of the screen of two ink cartridges, for example, the lid of an ink cartridge, and a pattern, when vacuum packaging is carried out, Moreover, the aperture which maintained air barrier property so that the pattern of the screen could be deciphered from the exterior is formed in field 20c' which the side face of an ink cartridge touches like the example shown in drawing 5 (b).
[0016] The manufacturing cost of a bag 20 can be reduced being able to check the contents of a bag 20 easily from the aperture formed in field 20c and 20c' in the display of ink cartridges 1 and 10 etc., and being able to use a label, its pasting activity, or printing as unnecessary without a bag 20 taking printing for specifying contents, and pasting of a label according to this.
[0017] In addition, in an above-mentioned example, although the case where it packed up

with the bag constituted with the film was explained, if it is the packing material which can secure air barrier property, it can be used for packing.
[0018] Moreover, although the case where reduced pressure packing of the object for black ink and the cartridge for color ink was carried out at the same bag was explained in the above-mentioned example, the black ink of two kinds of shades is held in a respectively independent cartridge, or the color ink of two or more kinds of shades is held in a respectively independent cartridge, and the same operation is done so even if it applies to the package of the cartridge for enclosure of the recording apparatus which equips with and uses three or more cartridges for coincidence.
[0019] Furthermore, in an above-mentioned example, although the case where it was used for the enclosure at the time of factory shipments was explained, it is clear that the black ink cartridge and color ink cartridge for exchange as supply goods are applicable as a package gestalt in the case of selling the goods of a pair or the cartridge of the same kind as goods of a pair.
[0020]
[Effect of the Invention] As mentioned above, maintaining a reduced pressure condition for a long period of time, since two or more ink cartridges were closed together in the state of reduced pressure in the ink cartridge for ink jet recording apparatus to single packaging which consists of an air-barrier-property member in this invention as explained, moreover the reduction in package cost, environmental preservation, and saving resources can be planned, and an activity mistake can be prevented further. especially -- highly minute printing -- like the ink cartridge for recording apparatus which prints by the very small ink droplet like, since a reduced pressure condition can be maintained over a long period of time when the volume of a cartridge is small, the mistake of initial restoration of the ink to the recording head in a user side can be reduced sharply.

TECHNICAL FIELD

[Field of the Invention] This invention is related in the cartridge for ink jet recording apparatus, and the packing gestalt of two or more [more] ink cartridges [detail].

PRIOR ART

[Description of the Prior Art] The ink jet recording device is packed up with the condition of not filling up a recording head with ink by the case, with an ink cartridge, an operation manual, and other accessories on the relation treating a liquid called ink. And actuation filled up with ink is performed, without leaving the foreign matter which equips a recording head with an ink cartridge, serves as air bubbles etc. to initial loading actuation, i.e., a recording head, and serves as record actuation with a failure in the phase over a user's hand. In order that what raised whenever [degassing] as compared with that with which use is usually presented in order to prevent certainly that air bubbles remain at the time of restoration of ink is used and the ink cartridge enclosed by such an object

for initial loading, i.e., a recording apparatus, may maintain whenever [degassing] for a long period of time, as shown in drawing 6 (b) and (b), it is packed up with a reduced-pressure condition by the bags A and B which consisted of air-barrier-property members, and classification is displayed on each. Moreover, although exchanging an ink cartridge for a new thing and filling up a recording head with ink is performed when ink is consumed by printing and it becomes an ink end, it is packed up the same with having mentioned above such an ink cartridge for exchange.

EFFECT OF THE INVENTION

[Effect of the Invention] As mentioned above, maintaining a reduced pressure condition for a long period of time, since two or more ink cartridges were closed together in the state of reduced pressure in the ink cartridge for ink jet recording apparatus to single packaging which consists of an air-barrier-property member in this invention as explained, moreover the reduction in package cost, environmental preservation, and saving resources can be planned, and an activity mistake can be prevented further. especially -- highly minute printing -- like the ink cartridge for recording apparatus which prints by the very small ink droplet like, since a reduced pressure condition can be maintained over a long period of time when the volume of a cartridge is small, the mistake of initial restoration of the ink to the recording head in a user side can be reduced sharply.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] Usually, since it is packed up with the reduced pressure condition according to the individual with the bag which consisted of air-barrier-property members, when loading with two or more kinds of ink cartridges like a color ink jet recording apparatus the first stage, respectively, an ink cartridge needs to take out two or more ink cartridges from a bag to coincidence, and requires time and effort for it. In order to pack up specially what is used not only for it but for coincidence according to an individual, package cost goes up, and two or more bags serve as dust, and consumption of packing material is caused, and it is not desirable from a viewpoint of environmental preservation or saving resources. The place which this invention is made in view of such a problem, and is made into the purpose is offering the ink cartridge of an ink jet recording apparatus which can moreover plan not only the reduction in package cost but environmental preservation, and saving resources, maintaining a reduced pressure condition for a long period of time.

MEANS

[Means for Solving the Problem] In order to solve such a problem, in this invention, two or more ink cartridges were closed together in the state of reduced pressure in the ink

cartridge for ink jet recording apparatus to single packaging which consists of an air-barrier-property member.
[0005]
[The mode of implementation of invention] Then, based on the example illustrating the detail of this invention, it explains below. Drawing 1 and drawing 2 show one example of the ink cartridge of this invention, the cartridge 1 for black ink can hold the ink of optimum dose, as shown in drawing 1 , and ink is held and it is constituted [it closes opening with a lid 4 on the case body 3 which equipped the upper part with the ink feed hopper 2 (this drawing (**)) which opens opening for free passage with a recording head in the lower part again, and].
[0006] The rill 8 which connects the ink inlet 5, the atmospheric-air free passage opening 6, and the atmospheric-air free passage opening 6 and the atmospheric-air clear aperture 7 is formed in the top face of a lid 4, as shown in drawing 1 (Ha), 9a tears off a part and the closure is carried out with the possible film 9.
[0007] Moreover, as shown in drawing 2 , the color ink cartridge 10 is divided into two or more rooms 11 by the wall so that the optimum dose hold of the ink of each color can be carried out, the ink of each color is held in each part store 11, and closes opening with a lid 14 on the case body 13 which equipped the upper part with the ink feed hopper 12 which opens opening for free passage in each part store 11 again at the lower part, and is constituted.
[0008] The rill 18 which connects the ink inlet 15, the atmospheric-air free passage opening 16, and the atmospheric-air free passage opening 16 and the atmospheric-air clear aperture 17 is formed in the top face of a lid 14, as shown in drawing 1 (Ha), 19a tears off a part and the closure is carried out with the possible film 19.
[0009] And if it is in the ink cartridge for initial loading especially, the ink by which degassing was fully carried out is filled up with the degree of vacuum usually higher than the case of elegance.
[0010] The object for these black ink and the cartridges 1 and 10 for color ink are decompressed from opening 20a, as shown in drawing 4 (b), as shown in drawing 3 , it holds in the bag 20 as was constituted by air blocking film by making two pieces into a pair, the closure of them is carried out by heat joining etc., they are packed up, and as shown in drawing 4 (b), remainder 20b is folded up.
[0011] Thus, since dead space arises among two or more ink cartridges by closing two ink cartridges 1 and 10 into the same bag 20, big reduced pressure space can be secured as compared with the case where each is independently closed into a bag, and the ink of two ink cartridges 1 and 10 can be maintained in the degassing condition with the negative pressure of this reduced pressure space for a long period of time.
[0012] In addition, the sense is not asked, if it does not spoil the function or shelf life of an ink cartridge in packing up two or more ink cartridges 1 and 10 into a bag 20.
[0013] Moreover, since what is necessary is just to hold one bag 20 in a case also in case it encloses with a recording device, the packaging to a case can be simplified to man day reduction of a reduced pressure activity or closure activities, and a pan.
[0014] On the other hand, if one bag is opened, since the cartridge the object for black ink and for color ink will become usable, the user who purchased the recording apparatus can save the time and effort of opening. And a recording head can be filled up with ink the first stage, without making a recording head generate air bubbles by bigger reduced

pressure space than the case of the independent package secured to the bag, though the long time has passed since factory shipments, since whenever [degassing / of the ink of each ink cartridge] is fully high. And since only the wreckage of one packaging remains also after extraction of two or more ink cartridges, streamlining of dust can be attained.
[0015] Drawing 5 (b) and (b) show other examples of this invention, respectively, and set them in the example of drawing 5 (b). Field 20c which contacts patterns, such as an alphabetic character of the screen of two ink cartridges, for example, the lid of an ink cartridge, and a pattern, when vacuum packaging is carried out, Moreover, the aperture which maintained air barrier property so that the pattern of the screen could be deciphered from the exterior is formed in field 20c' which the side face of an ink cartridge touches like the example shown in drawing 5 (b).
[0016] The manufacturing cost of a bag 20 can be reduced being able to check the contents of a bag 20 easily from the aperture formed in field 20c and 20c' in the display of ink cartridges 1 and 10 etc., and being able to use a label, its pasting activity, or printing as unnecessary without a bag 20 taking printing for specifying contents, and pasting of a label according to this.
[0017] In addition, in an above-mentioned example, although the case where it packed up with the bag constituted with the film was explained, if it is the packing material which can secure air barrier property, it can be used for packing.
[0018] Moreover, although the case where reduced pressure packing of the object for black ink and the cartridge for color ink was carried out at the same bag was explained in the above-mentioned example, the black ink of two kinds of shades is held in a respectively independent cartridge, or the color ink of two or more kinds of shades is held in a respectively independent cartridge, and the same operation is done so even if it applies to the package of the cartridge for enclosure of the recording apparatus which equips with and uses three or more cartridges for coincidence.
[0019] Furthermore, in an above-mentioned example, although the case where it was used for the enclosure at the time of factory shipments was explained, it is clear that the black ink cartridge and color ink cartridge for exchange as supply goods are applicable as a package gestalt in the case of selling the goods of a pair or the cartridge of the same kind as goods of a pair.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] drawing (**) or (Ha) it is the perspective view showing one example of the cartridge for black ink of this invention, respectively.
[Drawing 2] drawing (**) or (Ha) it is the perspective view showing one example of the cartridge for color ink of this invention, respectively.
[Drawing 3] It is drawing showing the packing process of the object for black ink same as the above, and the cartridge for color ink.
[Drawing 4] Drawing (b) and (b) are drawings showing the gestalt which packs up two or more ink cartridges of a class as a pair, respectively.
[Drawing 5] Drawing (b) and (b) are drawings showing other examples of this invention, respectively.

[Drawing 6] Drawing (b) and (b) are the perspective views showing an example of the package gestalt of the conventional object for the black ink for enclosures, and the cartridge for color ink, respectively.
[Description of Notations]
1 Cartridge for Black Ink
10 Cartridge for Color Ink
20 Bag

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審査請求　未請求　請求項の数６　ＯＬ　（全　５　頁）

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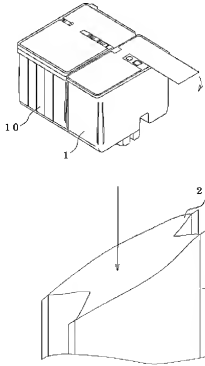
最終頁に続く

(54)【発明の名称】　インクジェット記録装置用のインクカートリッジ

(57)【要約】
【課題】　インクカートリッジの減圧状態を長期間維持しつつ、しかも包装コストの引き下げ、環境保全、省資源を図り、さらには作業ミスを防止すること。
【解決手段】インクジェット記録装置に初期装填される複数、たとえばブラックインクカートリッジ１とカラーインクカートリッジ１０を遮気性部材からなる同一の袋２０に減圧状態で封止して梱包する。



【特許請求の範囲】
【請求項１】　インクジェット記録装置用のインクカートリッジにおいて、複数のインクカートリッジを、遮気性部材からなる単一の梱包材に減圧状態で一緒に封止したインクジェット記録装置用のインクカートリッジ。
【請求項２】　前記梱包材の一部に、少なくとも前記インクカートリッジの外観の一部識別可能な領域が形成されている請求項１に記載のインクジェット記録装置用のインクカートリッジ。
【請求項３】　複数種のインクカートリッジを使用して印刷を行うインクジェット記録装置用のインクカートリッジにおいて、複数種のインクカートリッジを遮気性部材からなる単一の梱包材に減圧状態で一緒に封止したインクジェット記録装置用のインクカートリッジ。
【請求項４】　前記梱包材の一部に、少なくとも前記インクカートリッジの外観の一部識別可能な領域が形成されている請求項３に記載のインクジェット記録装置用のインクカートリッジ。
【請求項５】　インクジェット記録装置用のインクカートリッジにおいて、未使用状態のインクジェット記録装置に同梱される複数のインクカートリッジを、遮気性部材からなる単一の梱包材に減圧状態で一緒に封止したインクジェット記録装置用のインクカートリッジ。
【請求項６】　前記梱包材の一部に、少なくとも前記インクカートリッジの外観の一部識別可能な領域が形成されている請求項５に記載のインクジェット記録装置用のインクカートリッジ。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は、インクジェット記録装置用カートリッジ、より詳細には複数のインクカートリッジの梱包形態に関する。
【０００２】
【従来の技術】インクジェット記録装置は、インクという液体を扱う関係上、記録ヘッドにインクを充填しない状態で、インクカートリッジや取り扱い説明書、その他付属品と共にケースに梱包されている。そして、ユーザの手元に渡った段階で、インクカートリッジを記録ヘッドに装着して初期装填操作、つまり記録ヘッドに気泡等、記録動作に障害となる異物を残すことなくインクを充填する操作が行われる。このような初期装填用、つまり記録装置に同梱されるインクカートリッジは、インクの充填時に気泡が残留するのを確実に防止するため、通常使用に供されるものに比較して脱気度を高めたものが使用され、その脱気度を長期間維持するため、図６（イ）、（ロ）に示したように遮気性部材で構成された袋Ａ、Ｂに減圧状態で梱包され、それぞれに種別が表示されている。また、印字によりインクが消費されてインクエンドとなった場合には、インクカートリッジを新しいものに交換して記録ヘッドにインクを充填することが行われるが、このような交換用のインクカートリッジも上述したのと同様に梱包されている。
【０００３】
【発明が解決しようとする課題】通常、インクカートリッジはそれぞれ遮気性部材で構成された袋により減圧状態で個別に梱包されているため、カラーインクジェット記録装置のように複数種類のインクカートリッジを初期装填する場合には同時に複数のインクカートリッジを袋から取り出す必要があり、手間が掛かる。そればかりでなく、同時に使用されるものをわざわざ個別に梱包するため、包装コストが上昇し、また複数の袋がゴミとなったり、また梱包材料の消費を招き、環境保全や省資源の観点から好ましくはない。本発明はこのような問題に鑑みてなされたものであって、その目的とするところは、減圧状態を長期間維持しつつ、しかも包装コストの引き下げばかりでなく、環境保全や省資源を図ることができるインクジェット記録装置のインクカートリッジを提供することである。
【０００４】
【課題を解決するための手段】このような問題を解消するために本発明においては、インクジェット記録装置用のインクカートリッジにおいて、複数のインクカートリッジを、遮気性部材からなる単一の梱包材に減圧状態で一緒に封止するようにした。
【０００５】
【発明の実施の態様】そこで以下に本発明の詳細を図示した実施例に基づいて説明する。図１、図２は、本発明のインクカートリッジの一実施例を示すものであって、ブラックインク用カートリッジ１は、図１に示したように適量のインクを収容でき、上部に開口を、また下部に記録ヘッドと連通するインク供給口２（同図（ロ））を備えたケース本体３に、インクを収容し、開口を蓋体４で封止して構成されている。
【０００６】蓋体４の上面には、インク注入口５、大気連通口６、及び大気連通口６と大気開放口７とを結ぶ細溝８が形成され、図１（ハ）に示したように一部９ａが引き剥がし可能なフイルム９により封止されている。
【０００７】また、カラーインクカートリッジ１０は、図２に示したように各色のインクを適量収容できるように壁により複数の部屋１１に分割され、上部に開口を、また下部に各部屋１１に連通するインク供給口１２を備えたケース本体１３に、各色のインクを各部屋１１に収容し、開口を蓋体１４で封止して構成されている。
【０００８】蓋体１４の上面には、インク注入口１５、大気連通口１６、及び大気連通口１６と大気開放口１７とを結ぶ細溝１８が形成され、図１（ハ）に示したように一部１９ａが引き剥がし可能なフイルム１９により封止されている。
【０００９】そして、特に初期装填用のインクカートリッジにあっては、通常品の場合よりも高い真空度で十分

に脱気されたインクが充填されている。

【0010】これらブラックインク用及びカラーインク用カートリッジ1、10は、図3に示したように2個をペアとするようにして遮気性フィルムにより構成された袋20に収容され、図4（イ）に示したように開口20aから減圧して熱溶着等により封止されて梱包され、図4（ロ）に示したように残部20bが折り畳まれている。

【0011】このように2個のインクカートリッジ1、10を同一の袋20に封止することにより、複数のインクカートリッジの間にデッドスペースが生じるため、それぞれを単独で袋に封止する場合に比較して大きな減圧空間が確保でき、この減圧空間の負圧により2個のインクカートリッジ1、10のインクを長期間、脱気状態に維持することができる。

【0012】なお、複数のインクカートリッジ1、10を袋20に梱包する場合にはインクカートリッジの機能や保存性を損なわなければ、その向きは問わない。

【0013】また、記録装置とともに同梱する際にも1つの袋20をケースに収容すればよいから、減圧作業や封止作業の工数削減、さらにはケースへのパッケージングが簡素化できる。

【0014】一方、記録装置を購入したユーザは、1つの袋を開封すれば、ブラックインク用とカラーインク用のカートリッジが使用可能となるため、開封の手間が省ける。そして、工場出荷から長時間が経過していたとしても、袋に確保されていた単独包装の場合よりも大きな減圧空間によりそれぞれのインクカートリッジのインクの脱気度が十分に高いから、記録ヘッドに気泡を発生させることなく、インクを記録ヘッドに初期充填することができる。そして、複数のインクカートリッジの取り出し後にも1つの梱包材の残骸しか残らないので、ゴミの減量化を図ることができる。

【0015】図5（イ）、（ロ）は、それぞれ本発明の他の実施例を示すものであって、図5（イ）の実施例においては、減圧包装されたとき、2個のインクカートリッジの表示面、たとえばインクカートリッジの蓋体の文字や図柄等のパターンに接触する領域20cや、また図5（ロ）に示した実施例のようにインクカートリッジの側面が接する領域20c'に、外部から表示面のパターンが判読できるように遮気性を維持した窓を形成したものである。

【0016】これによれば、袋20に内容物を明示するための印刷やラベルの貼付を要することなく、インクカートリッジ1、10の表示等を領域20c、20c'に形成された窓から袋20の内容物を容易に確認することができ、ラベルやその貼付作業、または印刷を不要として袋20の製造コストを引き下げることができる。

【0017】なお、上述の実施例においては、フィルムにより構成された袋により梱包する場合について説明したが、遮気性を確保できる包装材であれば梱包に使用することができる。

【0018】また、上述の実施例においてはブラックインク用とカラーインク用カートリッジを同一の袋に減圧梱包する場合について説明したが、濃淡2種類のブラックインクをそれぞれ独立のカートリッジに収容したり、濃淡2種類以上のカラーインクをそれぞれ独立のカートリッジに収容して、3つ以上のカートリッジを同時に装着して使用する記録装置の同梱用カートリッジの包装に適用しても同様の作用を奏する。

【0019】さらに、上述の実施例においては、工場出荷時の同梱用に使用する場合について説明したが、サプライ商品としての交換用のブラックインクカートリッジとカラーインクカートリッジとをペアの商品、または同一種のカートリッジをペアの商品として販売する場合の包装形態として適用できることは明らかである。

【0020】

【発明の効果】以上、説明したように本発明においては、インクジェット記録装置用のインクカートリッジにおいて、複数のインクカートリッジを、遮気性部材からなる単一の梱包材に減圧状態で一緒に封止したので、減圧状態を長期間維持しつつ、しかも包装コストの引き下げや環境保全、省資源を図ることができ、さらには作業ミスを防止することができる。特に、高精細印刷ように微少なインク滴で印刷を行う記録装置用のインクカートリッジのように、カートリッジの容積が小さい場合には、減圧状態を長期間にわたって維持することができるため、ユーザサイドでの記録ヘッドへのインクの初期充填のミスを大幅に減らすことができる。

【図面の簡単な説明】

【図1】図（イ）乃至（ハ）は、それぞれ本発明のブラックインク用カートリッジの一実施例を示す斜視図である。

【図2】図（イ）乃至（ハ）は、それぞれ本発明のカラーインク用カートリッジの一実施例を示す斜視図である。

【図3】同上ブラックインク用及びカラーインク用カートリッジの梱包過程を示す図である。

【図4】図（イ）、（ロ）は、それぞれ複数種類のインクカートリッジをペアとして梱包する形態を示す図である。

【図5】図（イ）、（ロ）は、それぞれ本発明の他の実施例を示す図である。

【図6】図（イ）、（ロ）は、それぞれ従来の同梱向けブラックインク用、及びカラーインク用カートリッジの包装形態の一例を示す斜視図である。

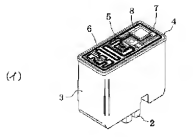
【符号の説明】

1　ブラックインク用カートリッジ

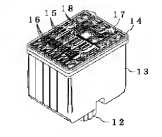
10　カラーインク用カートリッジ

20　袋

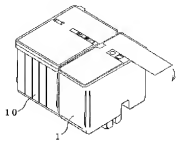
【図1】

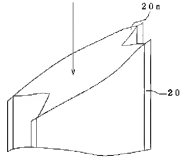


【図2】

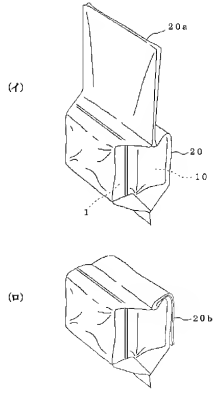


【図3】

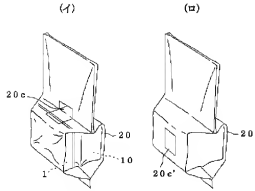




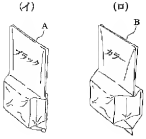
【図4】



【図5】



【図6】



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